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Oribatid Mites from Iriomote-jima, the Southernmost Island of Japan (I)

By

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青木淳一*: 西表島のササラダニ類

In biogeographical point of view, Iriomote Island (Iriomote-jima) has been attracted a great interest of biologists, especially because of many subtropical and ednemic forms occurring in this island. The investigations achieved there in past, however, were mostly restricted to popular aminal groups such as mammals, birds, larger insects, etc. and many groups remain still unknown scientifically. The free-living mites in this island represent one of the good examples of the latter groups and none of the species of the order Cryptostigmata (Oribatei) has hitherto been recorded from the Okinawa Islands including Iriomote Island. As a member of the National Science Museum Expedition to Ryukyu Archipelago in 1972 the author has a chance to make a collecting trip to Iriomte Island which is located in the southern extremity of Japan. Of the oribatid specimens obtained, the members belonging to the group Aptergasterina have been studied at first. A total of 13 families, 19 genera and 23 species were treated here, among which 7 species are described as new species or subspecies. All the remaining 16 species are, of course, recorded for the first time not only from the island, but also from the Okinawa Islands.

Before going further, the author wishes to express his deep appreciation to Mr. Sumio NAKATAMARI of Okinawa High School, who is the sole zoologist studying oribatid mites in Okinawa Prefecture and acted always in concert with the author in sampling soil and litter. The author intends to prepare the second part of this series of papers under joint authorship of him. Mr. Shigeki YASUMA of University of Tokyo guided us druing almost the whole schedule. His deep and extensive knowledge about the nature and life in this island greatly helped us in the collecting trip. Hearty thanks are also due to Yayeyama Kaihatsu Co. (President: Shingo TAKAHASHI) for their kind arrangement of comfortable lodgings for us and useful informations about the island.

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Collecting date of litter samples

IR-1 : Funaura, 30-XI-1972.	IR-15: Kampira Fall, Urauchi-gawa River, 29-XI-1972.
IR-2 : Uehara~Nakano, 1-XII-1972.	IR-16: Near the mid-stream of Nakara-gawa River, 28-XI-1972.
IR-3 : "	IR-17: "
IR-4 : Sumiyoshi, 30-XI-1972.	IR-18: Near the upper stream of Nakara-gawa River, 29-XI-1972.
IR-5 : "	IR-19: "
IR-6 : Sonai, 26-XI-1972.	IR-20: "
IR-7 : "	IR-21: Mt. Goza-dake, 3-XI-1972.
IR-8 : "	IR-22: Near the upper stream of Nakama-gawa River, 5-XI-1972.
IR-8 : "	IR-23: "
IR-9 : "	IR-24: 2 km W of Komi, 4-XII-1972.
IR-10: Shirahama, 30-XI-1972.	
IR-11: "	
IR-12: "	
IR-13: Kampira Fall, Urauchi-gawa River, 29-XI-1972.	
IR-14: Near the mouth of Urauchigawa River, 29-XI-1972.	

(IR-21 was collected by S. YASUMA and all the remaining samples by J. AOKI & S. NAKATAMARI)

List and Description of the Oribatid Mites Found

Cyrrthermannia parallela (AOKI, 1961)

Material examined. 6 exs. IR-16; 1 ex. IR-20.

Phyllhermannia kanoi (AOKI, 1959)

Material examined. 6 exs. IR-10; 3 exs. IR-12; 1 ex. IR-14; 3 exs. IR-16; 2 exs. IR-19; 1 ex. IR-20; 1 ex. IR-22.

Phyllhermannia pulcher sp. n.

(Figs. 1-5)

Distinguishing characters. Having foliate notogastral as well as interlamellar setae, the present new species is most closely related to *Ph. foliata* HAMMER, 1966, from New Zealand. HAMMER described these setae as "foliate, broadest across the middle and set with minute bristles". These setae of both species are quite similar in shape. However, surface of the setae of the Japanese form are not actually set with minute bristles, but only roughened, in other words, covered densely with minute granules. The apical portion of sensilli of *Ph. foliata* seems to be broader than that of *Ph. pulcher*. Near the posterior border of propodosoma there are "two dark scales" as HAMMER stated, but these structures are in *Ph. pulcher* situated each on a strong ridge with irregular margin. "A semilunar plate" in front of interlamellar ridge is absent in *Ph. pulcher*. More important difference is found in the shape of setae on femora I and II: Three setae (dorsal, paraxial and antiaxial) on the femur I of *Ph.*

foliata seems to be of the same shape and spatulate, and those of femur II are all normal seta-like. In *Ph. pulcher*, however, paraxial setae on femora I and II are sword-shaped and dorsal as well as antiaxial setae on femora I and II short and foliate, being rounded at tip (Figs. 2 & 3).

Supplementary description. It is uncertain whether there is important difference in anogenital region of the two species concerned, because HAMMER did not make mention of the feature in the ventral side of her species. Genital plate of *Ph. pulcher* bears, as in most species of the genus, 9 genital setae, among which 6 are arranged in the inner and the remaining 3 in the outer line; the anteriormost seta in the outer line is distinctly thicker and longer than the remainder; this condition seems to be a characteristic feature of the present new species (Fig. 5). Apical portion of sensillus become only slightly thicker and minutely roughened (Fig. 4). On notogaster, the median part is elevated longitudinally; the part shows more clear foveolation than the parts just outside it. Prodorsum provided anterolaterally on each side a distinct oblique ridge. Lamellar setae could not be detected.

Measurement. Body length: 570–572 μ ; breadth: 296–310 μ .

Material examined. Holotype(NSMT-Ac 8345, on slide); Sonai, Iriomote Island, 26–XI–1972, J. AOKI & S. NAKATAMARI (IR–8).

Hermanniella aristosa AOKI, 1965

Material examined. 1 ex. IR-8; 3 exs. IR-10; 4 exs. IR-20.

Hermanniella punctulata BERLESE, 1908

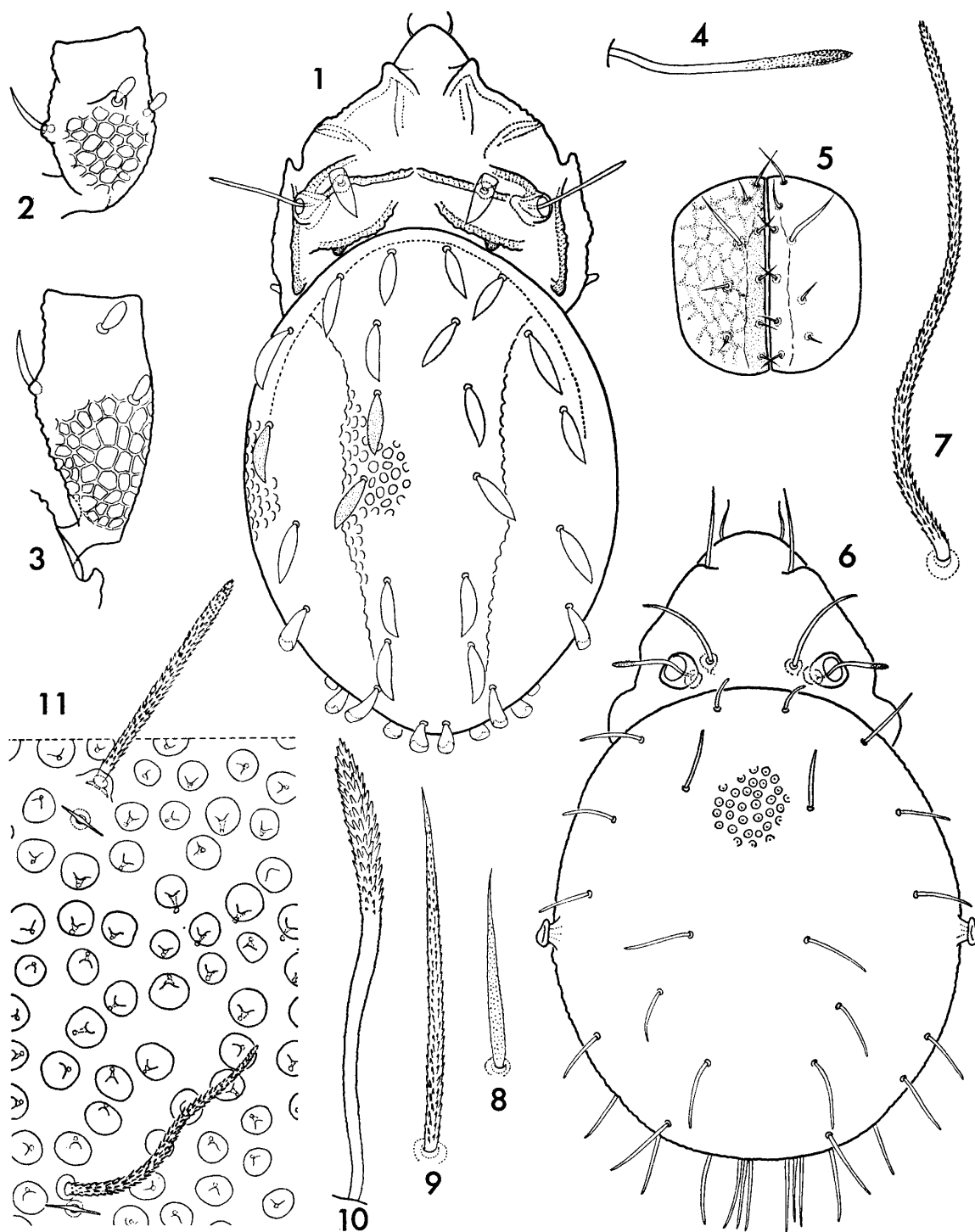
Material examined. 2 exs. IR-6; 2 exs. IR-16.

Hermanniella yasumai sp. n.

(Figs. 6–11)

Distinguishing characters. Being provided with densely barded notogastral setae, the present new species is most closely related to the two East African species, *H. humilis* BALOGH, 1962, and *H. congoensis* BALOGH, 1958. Long interlamellar seta, sensillus barbed on the apical portion and notogastral setae nearly of the same thickness throughout their length are quite similar to those of *H. congoensis*. However, notogastral foveolae are not so large and arranged not so close to one another as in *H. congoensis*, but are moderate in size and rather with wide interspace as in *H. humilis*. The body size of *H. yasumai* is considerably larger than those of the species in comparison.

Supplementary description. Prodorsum has a pair of rounded protuberances behind insertions of lamellar setae. The order in length of prodorsal setae: *in* > *sens* > *la* > *ro*. Interlamellar seta nearly of the same thickness throughout its length, not pointed at tip and distinctly barbed along the length. Lamellar seta attenuating toward the tip and moderately barbed. Rostral seta strongly attenuating toward the tip, only minutely roughened. Apical



Figs. 1-5. *Phyllhermannia pulcher* sp. n. — 1: Dorsal. — 2: Right femur II. — 3: Right femur I. — 4: Sensillus. — 5: Genital plates.

Figs. 6-11. *Hermanniella yasumai* sp. n. — 6: Dorsal. — 7: Interlamellar seta. — 8: Rostral seta. — 9: Lamellar seta. — 10: Sensillus. — 11: Surface structure of notogaster, with notogastral setae.

portion of sensillus strongly barbed. Bothridia situated not so marginally, but not so close to each other, occupying an intermediate position between the typical species of the genus *Hermanniella* and the members of the genera *Ampullobates* or *Sacculobates*. Notogastral foveolae clearly separated from one another, never fused together. Sixteen pairs of notogastral setae moderately barbed, being nearly of the same thickness throughout their length but some setae on the posterior half of notogaster weakly attenuating apically. Anal and adanal setae similar in shape to rostral setae. Seven genital setae, of which 5 are arranged along the median margin of genital plate and the remaining 2 are more laterally; the posterior seta of the lateral line located in a level a little posterior to the middle of the plate.

Measurement. Body length: 720(779)840 μ ; breadth(except lateral tubes): 475(505)530 μ .

Material examined. Holotype (NSMT-Ac 8346, in spirit): Near the upper stream of Nakama-gawa River, Iriomote Island, 5-XII-1972, J. AOKI & S. NAKATAMARI (IR-23). — Paratopotypes (2 exs. in spirit and 1 ex. on slide): the same data as the holotype. — Paratypes (2 exs. in spirit: Sonai, Iriomote Island, 26-XI-1972, J. AOKI & S. NAKATAMARI (IR-6 and IR-9).

***Plasmobates asiaticus* sp. n.**

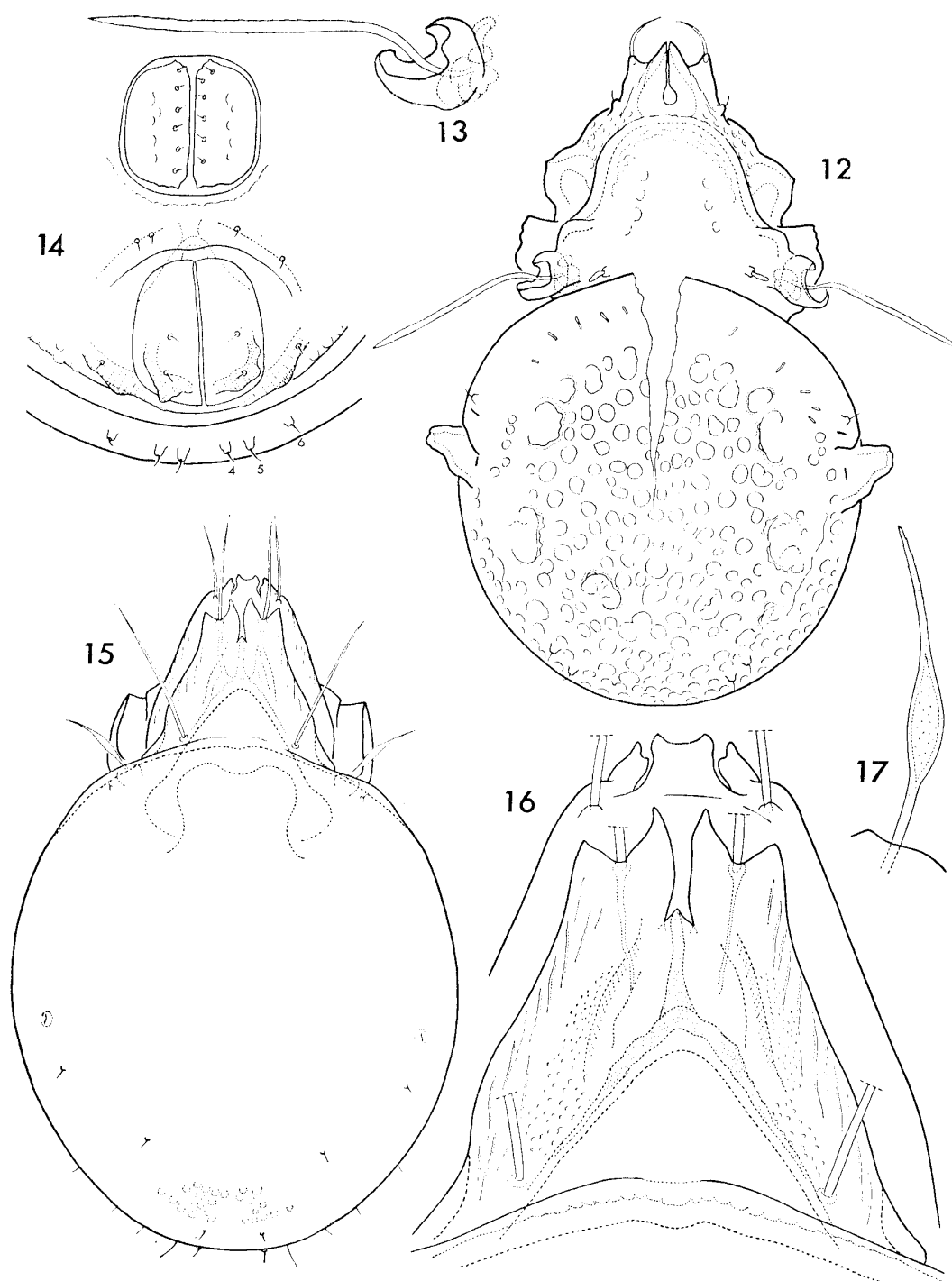
(Figs. 12-14)

Distinguishing characters. Sensillus long, nearly of the same thickness throughout its length, though somewhat pointed at tip. Interlamellar seta short rod-like, rather irregular in shape. Six pairs of notogastral setae, 6 pairs of genital setae and 3 pairs of adanal setae are present. Aggenital setae absent. Two posterodorsal setae (nos. 2 and 3 by the GRANDJEAN's notation) on each side situated close together. Notogaster, except anteromarginal area, covered by foveolae, among which several pairs are markedly large and irregular in shape. Most part of prodorsal surface lacking in foveolae. The posterior termination of rostral fissure rounded.

Measurement. Body length: 370 μ ; breadth (except lateral tubes): 230 μ .

Material examined. Holotype (NSMT-Ac 8340): Iriomote Island, XI-XII-1972, J. AOKI & S. NAKATAMARI.

Remarks. According to GRANDJEAN (1961), the type species of the genus, *P. pagoda* GRANDJEAN, 1929, has 8 pairs of notogastral, 7 pairs of genital and 1 pair of aggenital setae. Even after a careful examination, a single specimen of the present new species bears, however, 6, 6 and 0 pairs of these setae, respectively. It seems that *P. asiaticus* is deficient in notogastral setae nos. 7 and 8. Presence of 6 pairs of genital setae and lacking in aggenital setae are rather the characteristic features of the genus *Orbiculobates*. But the presence of notogastral foveolation as well as the lateral tubes of not irregular shape suggests the position of the new species in the genus *Plasmobates*, and neither in *Orbiculobates* nor in *Solenobates*. The second species of the genus *Plasmobates*, *P. carinatus* HAMMER, 1961, from Peru more resembles *P. asiaticus* in the shape of sensilli. But the sensillus of the former species is slightly thicker apically and seems to terminate in a blunt tip. Interlamellar setae of *P. carinatus* are minute and hardly discernible, while those of *P. asiaticus* are thick and distinct. In addition to these



Figs. 12-14. — 12: *Plasmobates asiaticus* sp. n. — 12: Dorsal. — 13: Bothridium and sensillus. — 14: Anogenital region.
 Figs. 15-17. *Liacarus yayeyamensis* sp. n. — 15: Dorsal. — 16: Lamellar and rostral region. — 17: Sensillus.

differences, the foveolation of *P. carinatus* covers more wide space, even the posterior part of prodorsum and the anterior part of notogaster. The family Plasmobatidae is reported for the first time from Asia.

Eremulus avenifer BERLESE, 1913

Material examined. 4 exs. IR-4.

Eremobelba japonica AOKI, 1959

Material examined. 5 exs. IR-10; 8 exs. IR-12; 1 ex. IR-14; 1 ex. IR-16; 1 ex. IR-17; 6 exs. IR-19; 2 exs. IR-20; 2 exs. IR-21.

Remarks. The specimens from Iriomte Island have the sensilli which are weakly, but distinctly serrated unilaterally. The body size is smaller compared with the mainland form.

Zetorchestes saltator (OUDEMANS, 1915)

Material examined. 1 ex. IR-1; 1 ex. IR-4; 3 exs. IR-5; 1 ex. IR-6; 2 exs. IR-7; 1 ex. IR-8; 1 ex. IR-10; 4 exs. IR-11; 5 exs. IR-14; 6 exs. IR-16; 2 exs. IR-17; 8 exs. IR-20; 9 IR-21; 4 exs. IR-23.

Liacarus yayeyamensis sp. n.

(Figs. 15-17)

Distinguishing characters. The new species resembles above all the two North American species, *L. lectronus* HIGGINS & WOOLLEY, 1969, and *L. bidentatus* EWING, 1918. In comparison with *L. lectronus*, the new species has a distinctly shorter median mucro between lamellar cusps. Rostral seta about 4/5 (2/3 in *L. lectronus*) as long as lamellar one. Interlamellar seta shorter, hardly reaching the tip of lamella (in *L. lectronus* the seta reaching the tip of rostral seta). Mutual distance of aggenital setae almost equal to, or slightly longer than, width of genital opening, being not so widely separated as in *L. lectronus*. Having a small median mucro between lamellar cusps, *L. bidentatus* may also a close relative of *L. yayeyamensis*. However, lamellar cusp of *L. yayeyamensis* about as long as wide, not so long as in *L. bidentatus*. Interlamellar seta distinctly longer than lamellar one, while in *L. bidentatus* the seta is shorter than lamellar one. Adanal fissures aligned longitudinally, being situated very close to the anal margin. But, in *L. bidentatus*, the fissures are aligned transversely and fairly distant from anal margin.

Supplementary description. Rostrum has 2 incisions, being trimucronate in shape; the median mucro has the concave anterior margin. Median dens of lamellar cusp always longer than the lateral one. Three pairs of prodorsal setae and sensilli very minutely roughened. The apical slender portion of sensillus longer than the exposed portion of peduncle. Adanal setae longer at least than half the width of anal plate; *ad*₃ located in a level posterior

to *iad*. Six genital setae arranged nearly in a straight line.

Measurement. Body length: 760(843)910 μ ; breadth: 515(545)806 μ .

Material examined. Holotype (NSMT-Ac 8347, in spirit): Near the middle stream of Nakara-gawa River, Iriomote Island, 28-XI-1972, J. AOKI & S. NAKATAMARI (IR-16)——Paratopotypes (3 exs. in spirit): the same data as the holotype.

***Ceratoppia quadridentata* (HALLER, 1880)**

Material examined. 2 exs. IR-20.

***Diplobodes kanekoi* AOKI, 1958**

Material examined. 1 ex. IR-11; 2 exs. IR-14; 2 exs. IR-20; 1 ex. IR-22.

Remarks. BALOGH(1961) regarded the genus *Diplobodes* AOKI, 1958, as a junior synonym of his genus *Gibbicepheus*, BALOGH, 1958. Both the genera are, however, quite different from each other in the shape of notogaster as well as in the number and arrangement of notogastral setae. The misapprehension by BALOGH must have been resulted from my unreasonable placement of the second species, *frondosus*, in the genus *Diplobodes*. The latter species was removed by BALOGH(1963) correctly from *Diplobodes* to *Gibbicepheus*.

***Gibbicepheus frondosus* (AOKI, 1958)**

Material examined. 9 exs. IR-7; 2 exs. IR-11; 1 ex. IR-16; 3 exs. IR-21; 1 ex. IR-22.

***Austrocarabodes nakatamarii* sp. n.**

(Figs. 18-21)

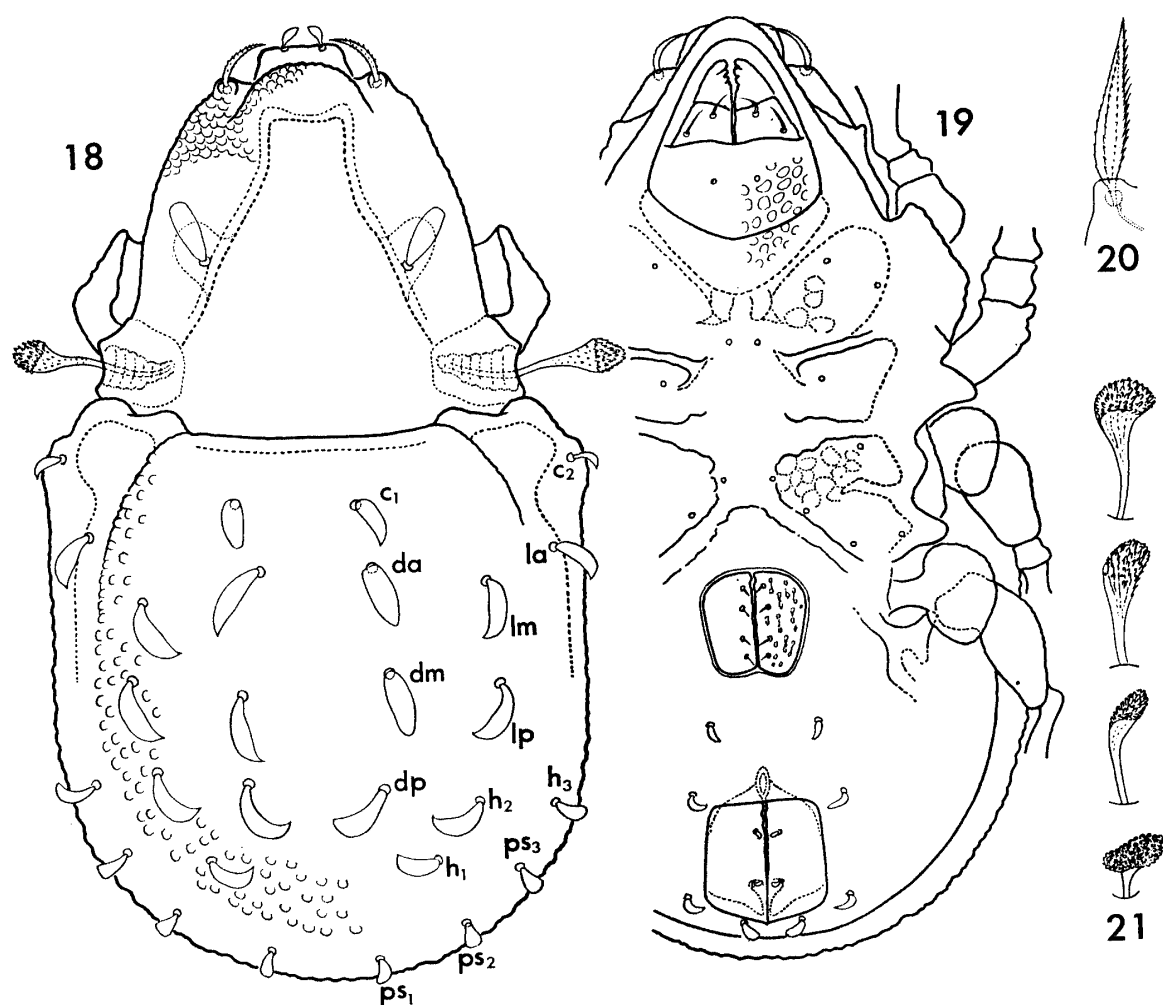
Distinguishing characters. Notogastral, interlamellar, rostral, adanal, aggenital and perhaps also anal setae broad and foliate, being more or less curled; their relative size: $in, nt(c_1, da, dm, dp, la, lm, lp, h_1 \text{ and } h_2) > nt(c_2, h_3, ps_1-ps_3) > ro, ad_3-ad_1, ag > an$; the setae seem to be almost smooth, though those of larger specimens show often a weak striation on their surface. In contrast these setae lamellar setae lanceolate, with serrate margins (Fig. 20). Genital setae short and simple. Notogastral seta c_2 situated near the margin of humeral projection. Sensillus rather short, bearing a curved flattened clavate head, so that it changes in appearance owing to various aspects for observation (Fig. 21).

Supplementary description. Notogastral as well as ventral surface covered with irregularly rounded tubercles which are pale in color and not always appear clearly wherever they exist. Lamellar and hypostomal regions show foveolate surface structure. Genital plate punctate. Mutual distances of paired median notogastral setae (c_1-c_1 , $da-da$, $dm-dm$ and $dp-dp$) nearly equal; $dm-dm$ among them usually somewhat longer than the rest. Mutual distance of interlamellar setae ($in-in$) distinctly longer than that of lamellar ones ($la-la$). Length/breadth of notogaster ranging from 0.95 to 1.20, average 1.06.

Measurement. Body length: 310(355)436 μ : breadth: 163(202)245 μ .

Material examined. Holotype (NSMT-Ac 8341, in spirit) and paratopotypes (8 exs. in spirit and 2 exs. on slides): Mt. Goza-dake (380 m), Iriomote Island, 3-XII-1972, S. YASUMA, J. AOKI & S. NAKATAMARI (LR-21).—Paratypes (4 exs. on slides): Sonai, Iriomote Island, 26-XII-1972, J. AOKI & S. NAKATAMARI (IR-7).—Paratypes (4 exs. on slides): Shirahama, Iriomote Island, 26-XI-1972, J. AOKI & S. NAKATAMARI (IR-10 and IR-11).—Paratypes (8 exs. in spirit and 4 exs. on slides): Near the upper stream of Nakara-gawa River, Iriomote Island, 28-XI-1972, J. AOKI & S. NAKATAMARI (IR-20).—Paratypes (5 exs. in spirit and 1 ex. on slide): Near the mid-stream of Nakara-gawa River, Iriomote Island, 28-XI-1972, J. AOKI & S. NAKATAMARI (IR-16).—Paratypes (7 exs. in spirit): Near the upper stream of Urauchi-gawa River, Iriomote Island, 29-XI-1972, J. AOKI & S. NAKATAMARI (IR-14).

Remarks. Nine species and 1 subspecies of the genus *Austrocarabodes* have hitherto been known from Ceylon, Chile, Spain and Pan-Pacific areas. Including the present new



Figs. 18-21. *Austrocarabodes nakatamarii* sp. n. — 18: Dorsal. — 19: Ventral. — 20: Lamellar seta. — 21: Sensilli in various aspects.

Table 1. Identification table of the species of the genus *Austrocarabodes* mainly based upon the types of body setae.

	1	2	3	4	5	6	7	8	9	10
<i>A. pseudoreticulatus</i> COVARBIAS, 1967	1	1	1	1	1	7	6	6	1	1
<i>A. arrogana</i> PEREZ-IÑIGO, 1967	1	1	1	1	1	6	6	6	1	1
<i>A. imperfectus</i> SELLNICK, 1959	1	1	1	1	1	6	6	6	1	1
<i>A. i. squamosus</i> HAMMER, 1970	1	1	1	1	1	6	7	7	1	1
<i>A. maculatus</i> HAMMER, 1966	1	1	1	1	1	6	7	6	1	1
<i>A. elegans</i> HAMMER, 1966	2	2	2	2	?	?	?	?	1	1
<i>A. sphaerula</i> BALOGH, 1970	3	3	3	3	3	?	?	?	2	1
<i>A. nodosus</i> HAMMER, 1966	4	4	3	3	3	6	7	6	1	1
<i>A. plumosus</i> BALOGH, 1970	8	8	5	6	8	?	?	?	1	2
<i>A. plumosulus</i> BALOGH, 1970	8	8	6	?	6	6	6	6	1	2
<i>A. nakatamarii</i> sp. n.	9	9	1	9	9	9	9	6	2	2

1: Notogastral setae (type, see Fig. 22)

2: Interlamellar setae (")

3: Lamellar setae (")

4: Rostral setae (")

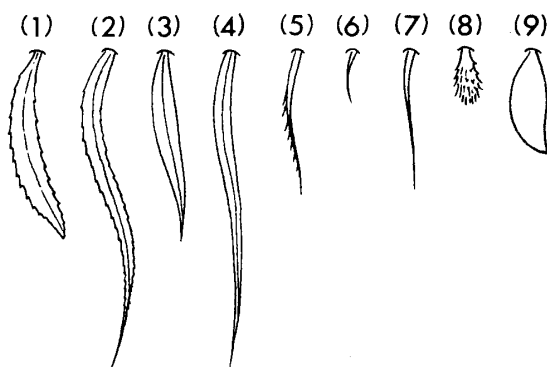
5: Adanal setae (")

6: Anal setae (")

7: Aggenital setae (")

8: Genital setae (")

9: Sensilli (1: slender, 2: clavate)

10: Setae c_2 (1: inserted not on humeral projections, 2: inserted on humeral projections)Fig. 22. Various types of notogastral setae in the genus *Austrocarabodes*.

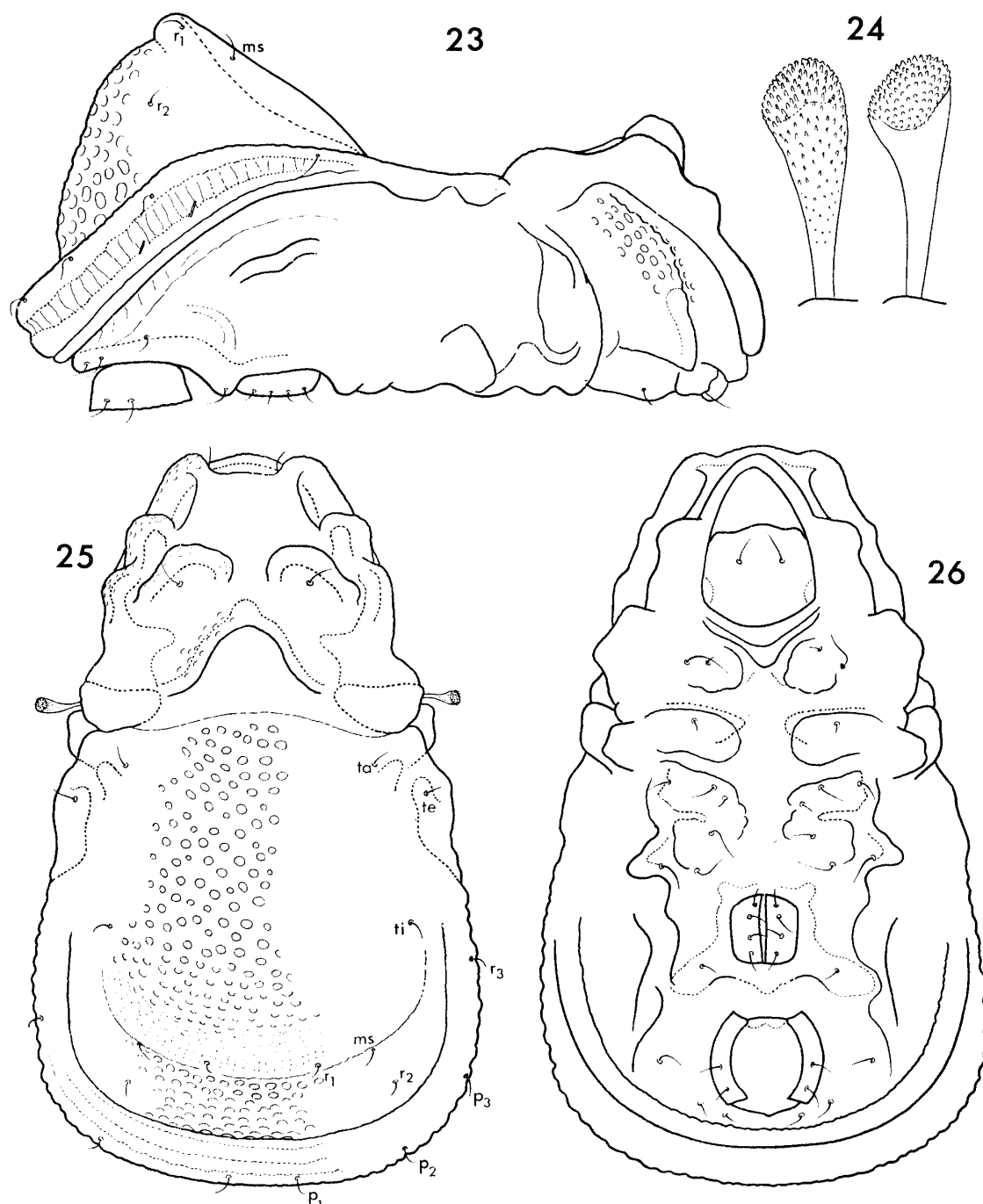
species, they can be most easily distinguished from one another by the shape of body setae as summarized in Table 1. *A. nakatamarii* differs from any other species in the shape of notogastral, interlamellar and rostral setae. As to the marginal position of setae c_2 , *A. nakatamarii* resembles *A. plumosus* BALOGH, 1970, and *A. plumosulus* BALOGH, 1970. The shape of sensilli of *A. nakatamarii*, on the other hand, rather similar to that of *A. sphaerula* BALOGH, 1970. It is interesting that all these relating species were reported from Ceylon which is the nearest place to Iriomote Island among the known habitats of the genus *Austrocarabodes*.

Meriocephus gen. n.

The present new genus seems to be closely related above all to the genera *Congocephus*,

Machadocephus, *Tuberocephus* and *Diplobodes*. However, the combination of the following characters separates *Meriocephus* from them: (1) Presence of 3 pairs of elevations on prodorsum, (2) clavate sensilli, (3) a steep swelling on the posterior part of notogaster and wide hollow in front of it, and (4) 10 pairs of fine notogastral setae.

Type-species: *Meriocephus peregrinus* sp. n.



Figs. 23-26. *Meriocephus peregrinus* gen. n. et sp. n. — 23: Lateral. — 24: Sensilli (left in ventral, right in dorsal aspect). — 25: Dorsal. — 26: Ventral.

Meriocepheus peregrinus sp. n.

(Figs. 23–26)

Prodorsum. Three pairs of prominent protuberances found near the basal parts of lamellae; the innermost pair bearing interlamellar setae are larger than the remaining 2 marginal pairs. Rostral and interlamellar setae fine and simple; lamellar setae could not be detected. Medioposterior part of prodorsum, triangular in shape, deeply lowered. Sensillus clavate, being curled upward in its portion; the ventral surface of the organ densely covered with minute barbs (Fig. 24).

Notogaster. A conspicuous, steep elevation exists on the posterior part, being surrounded by a flat marginal area; the upper edge of the elevation in dorsal view forms an arch opening anteriorly; the front slope of the elevation widely concave, while the hind slope is rather swollen. Humeral projection on each side moderately developed. Except for the marginal area and the upper edge of the elevation, notogastral surface shows foveolate structure. The pairs of short fine notogastral setae are present, though the left side is deficient in seta r_3 (or p_3 ?); setae $p_1 \sim p_3$ and r_3 situated marginally, r_1 and ms almost on the edge of the elevation, and te on humeral projections.

Ventral side. Genital plate provided with 4 setae standing at nearly regular intervals. Aggenital setae widely separated from each other. Anal plate bearing 2 setae which are inserted posteriorly, i.e. even the anterior seta (an_2) located a little posterior to the mid-level of the plate. Three pairs of adanal setae; ad_2 situated closer to ad_1 than to ad_3 . Setal formula for epimerata: 2(?)–1–3–3. All the setae on the ventral side are fine bristles.

Measurement. Body length: 570 μ ; breadth: 340 μ .

Material examined. Holotype (NSMT–Ac 8342, in spirit): Sonai, Iriomote Island, 26–IX–1972, J. AOKI & S. NAKATAMARI (IR–7).

Tokunocepheus mizusawai AOKI, 1966

Material examined. 1 ex. IR–7; 2 exs. IR–21.

Tectocepheus velatus (MICHAEL, 1880)

Material examined. 1 ex. IR–7.

Tegeozetes tunicatus breviclava AOKI, 1970

Material examined. 1 ex. IR–11.

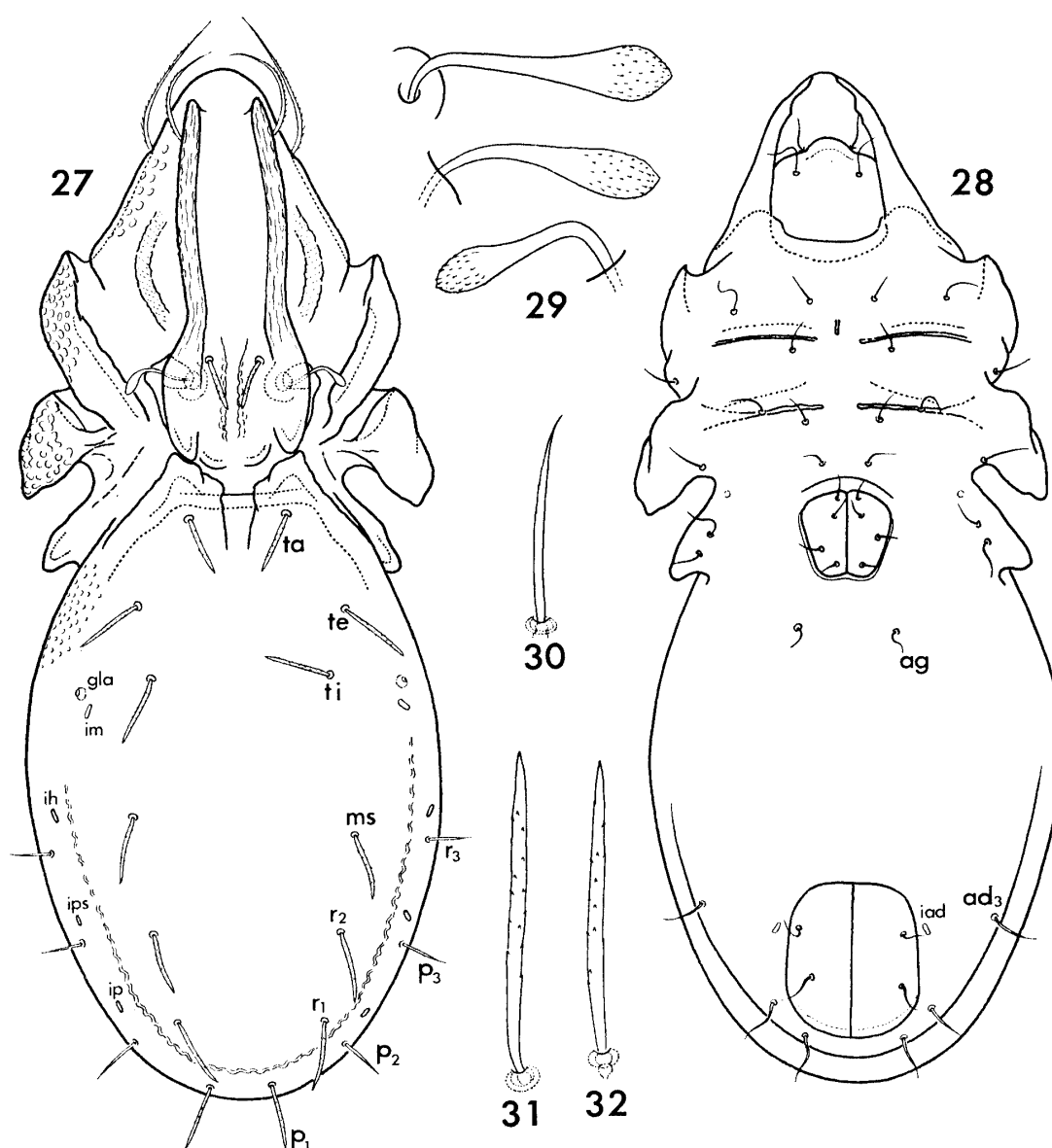
Acrotocepheus gracilis sp. n.

(Figs. 27–32)

Distinguishing characters. Body slender, length/width being 2.5~2.8. Notogastral

setae short; their RLN (relative length to notogaster) 7~14; setae p_2 , p_3 , and r_3 thin, nearly glabrous or slightly roughened and pointed at tip, while the remaining notogastral setae are rather thick, weakly roughened and blunt at tip. Sensillus short and clavate; the tip, however, not smoothly rounded, but slightly pointed. Rostral setae longer than lamellar as well as interlamellar setae, being the longest setae among the body setae.

Supplementary description. Lateral prodorsal condyle (*co. pl*) lobe-shaped, its outer margin being smoothly continued to the basal part of lamella. Median prodorsal condyle (*co. pm*) rather weakly developed, forming an arch with medioanterior opening. Notogastral condyle on each side has a double, sometimes triple structure; interspace between the condyles



Figs. 27-32. *Acrotocephalus gracilis* sp. n. — 27: Dorsal. — 28: Ventral. — 29: Sensilli. — 30: Notogastral seta r_3 . — 31: Notogastral seta ti . — 32: Notogastral seta p_1 .

narrow, its RLN being 5.1~5.8. Rostral and lamellar setae long and pointed at tip, weakly barbed unilaterally. Interlamellar setae similar in shape to most of notogastral setae; *in/in-in* 1.6~1.8. A longitudinal groove exists between interlamellar setae. An undulating marginal ridge running around notogaster. Gland opening (*gla*) located a little posterior to the level of setae *ti*. The anteriormost marginal setae (r_3) situated between the level of *ms* and that of r_2 . Lyrifissure *im* close and just posterior to *gla*; *ih* in front of r_3 , *ips* in front of p_3 , and *ip* in front of p_2 ; but in a single example among the specimens collected *ih* and *ips* situated in front of r_3 , and *ip* behind p_3 . Setal formula for epimerata: 3-1-3-3. Genital plates darker in color than anal as well as ventral plates; genital setae g_2 located near the outer margin. Adanal fissures aligned obliquely and close to the anal margin. Adanal setae ad_3 , *iad* and an_2 located nearly on the same level; ad_2 inserted far closer to ad_1 than to ad_3 .

Measurement. Body length: 956(1184)1380 μ ; breadth: 362(455)540 μ .

Material examined. Holotype (NSMT-Ac 8343, in spirit) and paratopotypes (4 exs. in spirit): Near the upper stream of Nakama-gawa River, Iriomote Island, 5-XII-1972, J. AOKI & S. NAKATAMARI (IR-22).—Paratype (1 ex. in spirit): Near the upper stream of Nakara-gawa River, Iriomote Island, 28-XI-1972, J. AOKI & S. NAKATAMARI (IR-19).

Remarks. The present new species is most closely related to *A. excelsus* AOKI, 1965, from Thailand. The latter species, however, distinguishable from *A. gracilis* by (1) the broader body shape (L/W: 1.45~1.60), (2) the wider interspaces between interlamellar setae, between lateral prodorsal condyles, as well as between notogastral condyles, (3) the rostral setae shorter than lamellar ones, (4) the notogastral setae *te* and *ti* situated close together, (5) the setae r_3 located nearly on the same level of r_2 , (6) the setae p_1 and p_2 longer and similar in shape and length to each other, (7) genital seta g_2 and anal seta an_1 located not so marginal in position, and (8) epimeral setae *4a* and *4c* on discidium located close to each other and side by side.

***Dolicheremaeus baloghi* AOKI, 1967**

Material examined. 3 exs. IR-1; 5 exs. IR-10; 1 ex. IR-12; 7 exs. IR-16; 1 ex. IR-19; IR-21; 1 ex. IR-22.

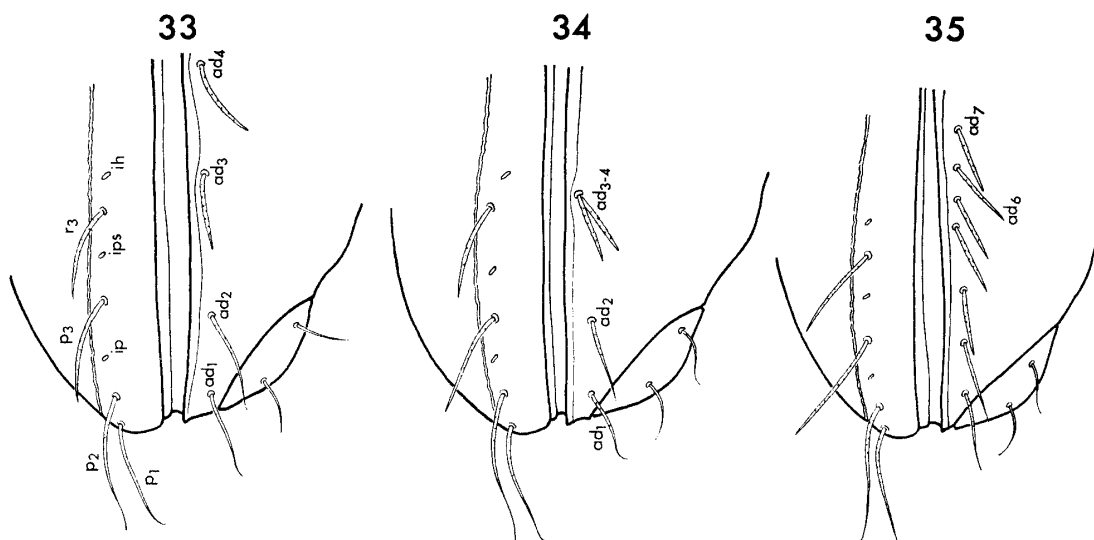
***Dolicheremaeus elongatus* AOKI, 1967**

Material examined. 2 exs. IR-1; 1 ex. IR-6; 4 exs. IR-7; 3 exs. IR-10; 5 exs. IR-11; 21 exs. IR-16; 1 ex. IR-17; 1 ex. IR-20; 4 exs. IR-21; 1 ex. IR-22.

***Trichotocepheus erabuensis modestus* subsp. n.**

(Figs. 33-35)

Distinguishing characters. The new subspecies differs from the nominate subspecies, *T. erabuensis erabuensis* AOKI, 1965, from Okino-erabu Island in the number of neotrichial



Figs. 33-35. *Trichotocephus erabuensis modestus* subsp. n. — Variation in the number of adanal setae.

Table 2. Comparison of some charaters among the examined specimens of *Trichotocephus erabuensis erabuensis* AOKI and *T. erabuensis modestus* subsp. n.

	Notogastral setae (Relative length, RLN)										Body size		Adanal setae (Number)	
											L (μ)	W (μ)	Left	Right
<i>T. erabusensis erabuensis</i> (holotype)	20	26	29	33	32	34	—	19	30	29	1460	700	13	12
(paratype)	22	31	31	38	37	40	32	21	29	32	1380	600	16	14
<i>T. erabuensis modestus</i> (holotype)	20	23	19	23	33	30	19	19	27	21	1415	650	4	4
(paratype)	18	21	22	25	—	29	21	26	28	24	1340	590	4	3
(paratype)	20	25	25	32	32	33	22	29	35	27	1130	480	3	4
(paratype)	20	25	25	28	39	36	24	31	36	28	1200	530	4	7

setae and in the relative length of notogastral setae. As to adanal setae, *T. erabuensis modestus* has 7(3+4), 8(4+4) or 11(4+7) setae, while *T. erabuensis erabuensis* bears more large number of adanal setae, i.e. 25(13+12) or 30¹⁾(16+14) (Table 2). No neotrichy is observed on notogaster.

Measurement. Body length: 1130(1271)1415 μ ; breadth: 480(563)590 μ .

Material examined. Holotype (NSMT-Ac 8344, in spirit): Near the upper stream of Nakama-gawa River, Iriomote Island, 5-XII-1972, J. AOKI & S. NAKATAMARI (IR-22). —Paratype (1 ex. in spirit): Shirahama, Iriomote Island, 30-XI-1972, J. AOKI &

1) "32" in the original description (AOKI, 1965, p. 328) should be corrected as "30".

S. NAKATAMARI (IR-11).—Paratype (1 ex. in spirit): Sonai, Iriomote Island, 26-XI-1972, J. AOKI & S. NAKATAMARI (IR-8).—Paratype (1 ex. in spirit): Near the upper stream of Nakara-gawa River, 28-XI-1972, J. AOKI & S. NAKATAMARI (IR-20).

Remarks. Taking the features of the present new subspecies into consideration, the setal number of the genus *Trichotocepheus* summarized in the table and the key by BALOGH (1972, p. 67) should be modified as follows: “12 pairs”²⁾ of notogasral setae should be changed to “10~14 pairs” (or 10+10, 13+14, 14+15, etc.) and “11~14 pairs of aggenital”³⁾ setae to “7~30 (not pairs !, but number) adanal setae”.

要 約

土壤中に生息するササラダニ類（ダニ目：隠気門亜目）は日本からすでに200種近くが記録されているが、その記録の最南端は奄美諸島の沖永良部島であって、それより南、すなわち、沖縄諸島および先島諸島を含む琉球諸島からは従来1種類の記録もない。今回、先島諸島の八重山列島に属する西表島と石垣島において調査する機会を得、多数のササラダニ類を採集することができた。本報では西表島で得られたもののうち、無翼団 *Apterogasterina* に属する13科19属23種について報告する。これらの種はすべて琉球諸島新記録であり、1新属・6新種・1新亜種を含んでいる。それらは次の通り：コノハセムシダニ（新称）*Phyllhermannia pulcher* sp. n., ヤスマドビンダニ（新称）*Hermanniella yasumai* sp. n., ツノカクシダニ（新称）*Plasmobates asiaticus* sp. n., ヤエヤマツヤタマゴダニ（新称）*Liacarus yayeyamensis* sp. n., ナカタマリイブシダニ（新称）*Austrocarabodes nakatamarii* sp. n., エグリダニ（新称）*Meriocepheus peregrinus* gen. n., sp. n., ヤリイカダニ（新称）*Acrotocepheus gracilis* sp. n., イリオモテイカダニ（新称）*Trichotocepheus erabuensis modestus* subsp. n.

本報では種の記録と記載に止めたが、西表島産の残りの種と石垣島産の種の解明が済んだのち、生物地理学的な考察を行なうつもりである。

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2) “12 pairs” must be misprint or misleading by BALOGH.

3) BALOGH mistook “adanal” for “aggenital”.

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